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| APPLICATION NO.                      | FILING DATE | FIRST NAMED INVENTOR      | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------|-------------|---------------------------|---------------------|------------------|
| 10/748,851                           | 12/31/2003  | Vadim Yevgenyevich Banine | 081468-0307473      | 2813             |
| 909                                  | 7590        | 09/12/2006                | EXAMINER            |                  |
| PILLSBURY WINTHROP SHAW PITTMAN, LLP |             |                           | RUTLEDGE, DELLA J   |                  |
| P.O. BOX 10500                       |             |                           | ART UNIT            |                  |
| MCLEAN, VA 22102                     |             |                           | PAPER NUMBER        |                  |
|                                      |             |                           | 2851                |                  |

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/748,851

Applicant(s)

BANINE ET AL.

Examiner

D. Rutledge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,9,11-14,17-27,29-33,35,36 and 41-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5,9,20-27 and 54-59 is/are allowed.
- 6) ☒ Claim(s) 11-14, 17-19, 19-33, 35, 36, 41-53 is/are rejected.
- 7) ☒ Claim(s) 19 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claims Previously Indicated Allowable, Now Rejected***

1. The claims on the gradient being applied to the magnetic field are now rejected.

### ***Claim Rejections - 35 USC § 102***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 11 – 14, 17, 18, 29 – 33, 35, 36 and 41 – 53 are rejected under 35 U.S.C. 10.23(e) as being anticipated by Melnychuk et al. (US Pub. No. 2005/0230645).

Melnychuk et al. was cited in the previous Office Action. The reference discloses a EUV source for a lithographic apparatus, but does not disclose the components for the lithographic apparatus. The components would be implicit.

Claims 11, 29, 41, 42: On further review, the reference which discloses a debris shield 102 and a debris collector 104, in paragraph 0174 discloses using a magnetic field to control the debris particles. The magnetic field may be pulsed, thus creating a magnetic field gradient.

Claims 45, 51: paragraph 0174 discloses the particles having a curved trajectory

Claims 12, 13, 30, 31, 43, 44, 46, 49, 50: The particles are forced toward the debris trapping surfaces of the debris shield 102 and the debris collector 104.

Claims 17, 33, 35, 48: in paragraph 0175, it is suggested that the magnetic field may be pulsed or switched on and off, thus creating a gradient. The paragraph teaches that by pulsing the field a high induction field strength may be achieved. This would suggest

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that one would use a predetermined pulsing frequency to achieve the particular field strength desired.

Claims 14, 18, 32, 36, 47, 52, 53: using one or more solenoids to produce the magnetic field is a commonly used method because of the low cost and simplicity. Such an arrangement would motivate one of ordinary skill in the art to use a solenoid.

***Allowable Subject Matter***

4. Claims 19 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 1 – 5, 9, 20 – 27 and 54 – 59 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose a debris mitigation system that is arranged to induce, in use, within a group of the debris particles, a current such that at least charged debris particles of that group deflect under influence of a force which has a direction perpendicular to a component of the magnetic field and perpendicular to a component of the electric current induced.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references disclose using a magnetic field having a gradient to control the flow of particles.


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***Response Data***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Rutledge whose telephone number is (571) 272-2127. The examiner can normally be reached on Mon - Thurs, 6:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
D. Rutledge  
Primary Examiner  
Art Unit 2851

dr  
9/5/2006